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AUTHOR	Brumbaugh, Douglas K.; Rock, David
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ABSTRACT

This book for future mathematics teachers emphasizes technology as a teaching tool; development of teachers who are self-motivated, lifelong learners; and pedagogical features that engage and motivate students. It includes examples and activities to enhance learning. Part 1, "General Fundamentals," includes (1) "Introduction"; (2) "Learning, Theory, Curriculum, and Assessment"; (3) "Planning"; and (4) "Skills in Teaching Mathematics." This part assumes some formal background in courses designed to provide a broad overview of education, curriculum, learning theory, discipline, planning, and adolescent behavior. Part 2, "Mathematics Education Fundamentals," includes (5) "Technology"; (6) "Problem Solving"; (7) "Discovery"; and (8) "Proof." This part examines topics out of the general education environment, focusing on subjects that will permeate instruction. Part 3, "Content and Strategies," looks at (9) "General Mathematics," (10) "Algebra I"; (11) "Geometry"; (12) Algebra II and Trigonometry"; (13) "Pre-Calculus"; (14) "Calculus"; and (15) "Probability and Statistics." This part is designed to capitalize on issues discussed in class and on the expertise and preferences of the teacher, providing models of how concepts typically found in secondary mathematics curriculum can be delivered so all students develop positive attitudes about learning and using mathematics. (Chapters contain references.) (SM)

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